

EXTENSION OF RANGE FOR TWO SYMPHYLID SPECIES (SYMPHYLA: SCOLOPENDRELLIDAE)¹

Steven J. Loring²

ABSTRACT: Symphylids collected in Michigan have been identified as *Symphylella vulgaris* (Hansen) and *Scolopendrellopsis* (*Symphylellopsis*) *subnuda* (Hansen). *S. vulgaris* has been reported in North America only from California, while *S. (S.) subnuda* has not previously been reported from North America. This undoubtedly reflects limited collection and sporadic identification.

Symphyla are white, blind, progoneate myriapods which are between 2 and 10 mm long, have a thin integument through which respiration occurs, and possess 12 pairs of legs as adults. They inhabit leaf litter, decaying logs, soil, and similar habitats with high humidity. Although common, these animals are often overlooked by investigators because of their small size and cryptic habits.

Records of Symphyla have been reported from North America since Packard (1873), although it was not until much later that symphylids presently classified in the Family Scolopendrellidae were described from North America (Hilton, 1931). Michelbacher (1939a, b, 1941) described nine new species of nearctic Scolopendrellidae, bringing their total to fifteen.

Since that time virtually nothing has been done with the systematics of the nearctic Symphyla. Taxonomic keys to the Symphyla are few. Edwards (1959a, b) devised keys to the genera of Symphyla and the species found in Great Britain. The only other comprehensive keys available are incomplete and out-dated (Hansen, 1903; Attems, 1926; Verhoeff, 1934). Brief keys to certain genera and species of Symphyla do exist (e.g. Michelbacher, 1942; Scheller, 1978) but are scattered in the literature.

For significant works on the biology of Symphyla, the reader is referred to Michelbacher (1938, 1949), Tiegs (1940, 1945), Edwards 1958, 1959c, 1961), Juberthie-Jupeau (1963), and Manton (1966). In the author's opinion, the classic work by Verhoeff (1934) remains the best single source of information on Symphyla.

The symphylids reported here were collected from southern Michigan and identified as *Symphylella vulgaris* (Hansen) and *Scolopendrellopsis* (*Symphylellopsis*) *subnuda* (Hansen). The known distribution of each

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²Department of Zoology, Michigan State University, East Lansing, Michigan 48824.

species has been greatly extended. Descriptions of these animals may be found in Hansen (1903) and Scheller (1978).

Methods

Core samples 15 cm deep were extracted by Tullgren funnels or water flotation. The animals were stored in a solution of 95% ethanol with 1% glycerine added. For viewing and identification purposes, specimens were mounted on microscope slides using Diaphane, CMC-10, or CMCP-9. The latter two mounting media are nonresinous preparations, containing chloral hydrate, purchased from Turtox Biological Supply.

Species

Symphylella vulgaris has been collected from the following locations:

Kalamazoo Co., Kellogg Biological Station, T1S: R9W: S6³, grass with sandy loam and woods with loam, June 29, 1978, collector: S.J. Loring; four specimens mounted on slides.

Ingham Co., Okemos, T4N: R1W: S34, garden with sandy loam, August 1978, collector: R.M. Snider; five specimens mounted on slides, three stored in ethanol-glycerine.

Ingham Co., East Lansing, T3N: R1W: S7, grass with loam, September 5, 1973, collector: R.M. Snider; one specimen mounted on a slide, nineteen stored in ethanol-glycerine.

Ingham Co., Michigan State University Soil Science Research Station, T4N: R1W: S19, agricultural fields with loamy sand, April-November 1977, April 1978, collector: S.J. Loring; one specimen mounted on a slide, five stored in ethanol-glycerine.

Scolopendrellopsis (Symphylellopsis) subnuda has been collected from the following locations:

Ingham Co., Michigan State University Soil Science Research Station, T4N: R1W: S19, agricultural fields with loamy sand, April-November 1977, April 1978, collector: S.J. Loring; four specimens stored in ethanol-glycerine.

Ingham Co., Okemos, T4N: R1W: S34, garden with sandy loam, May 8, 1979, collector: S.J. Loring; three specimens mounted on slides, ten stored in ethanol-glycerine.

³T:R:S: refers to the United States Rectangular Surveying System, wherein T and R are north-south and east-west axes, respectively, and S refers to a square-mile block within the thirty six square-mile T:R coordinates.

All specimens will be deposited in the Invertebrata collection at The Museum, Michigan State University.

Discussion

Both species were found throughout the top 15 cm of soil. *S. vulgaris* has previously been reported in North America only from southern California (Hilton, 1931), although it has a world-wide distribution (Scheller, 1978). Similarly, *S. (S.) subnuda* is common throughout much of the world (Scheller, 1978), but has not previously been reported from the nearctic or neotropical regions. The formerly restricted ranges reported for these species is undoubtedly related to the paucity of collected and described American Symphyla.

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BOOK REVIEW

THE LIFE OF BEETLES. Glyn Evans. 1977. Allen & Unwin, Inc. 9 Winchester Terrace, Winchester, Mass. 01890. Ppbk. (reprint of 1975 hardcover). 232 pp. \$7.50.

I don't know how this little book has escaped me for so long, for here is an *excellent* presentation and discussion on the natural history of beetles. The subject matter is substantive, authoritative and scientifically accurate, yet so interestingly written that, once started, one can hardly put the book down for a brief intermission until it has been thoroughly read from cover to cover.

The book contains a wealth of material suited to both amateur and professional Coleopterists, especially in the fields of morphology (Chapters 2 and 3 on "Beetle Forms and Body Functions" and "Reproduction and Life History"), ecology (Chapters 4, 5 and 6 on "Food and Feeding Habits", on "(Protective) Habits and Habitats" and on "Populations and Communities") and economic importance of beetles (Chapter 7 on "Beetles and Man"). Throughout the book the author provides abundant examples and numerous line illustrations in support of the various points made throughout the text.

The appendix includes information on pitfall trapping and keys to woodland beetles in Britain. A glossary, a list of references, a bibliography and index concludes this fine book. About the only drawback this has for American Coleopterists is that, since it is written by a British entomologist, quite naturally British beetles are used in a large number of instances as examples to support and illustrate the text. However, so much subject matter of a universal nature is provided that this small volume is well worth the little investment to obtain it, read it and have it in one's reference library.

H.P.B.